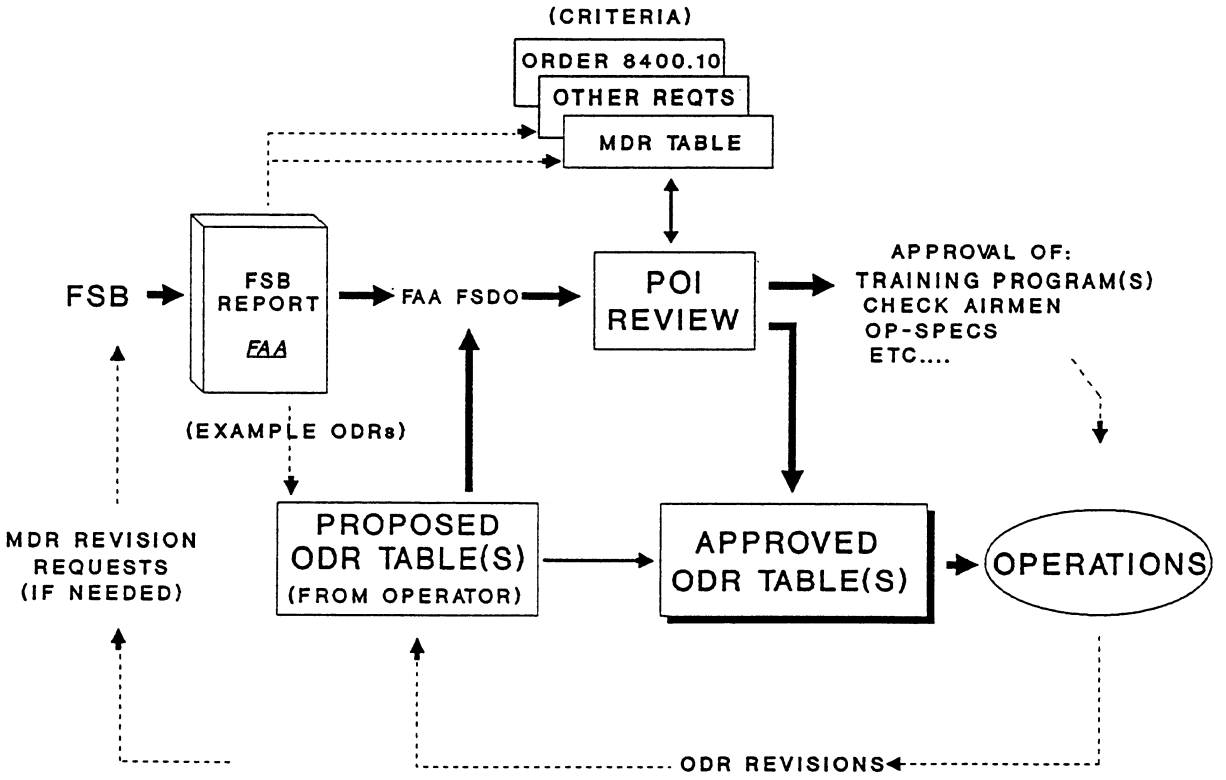
8. AIR CARRIER APPLICATION OF FSB PROVISIONS, PREPARATION, USE, AND REVISION OF ODR's.

8.1. General

8.1.1 Process Overview. FSB reports contain MCR's, MDR's, and other provisions which are applied by FAA offices in approving operators' programs. MCR's are applied generally to an operator's proposed programs, and MDR's are applied through a particular method which identifies operator specific requirements (ODR's) and compliance methods. Application of MCR's, MDR's, and other FSB provisions are one means to ensure crew qualification for safe air carrier operations. This is necessary so that regardless of which aircraft or variants crews fly, uniform training, checking, and currency standards are met within the constraints of the FAR. This section describes operator application of MCR's, MDR's, and other FSB provisions for training, checking, and currency. It primarily focuses on ODR table development and FAA approval of operator's programs for mixed fleet flying. Although addressing general requirements through MCR's, the process primarily focuses on criteria for approval and management of specific operator mixed fleet flying programs involving differences and variants. This is done through operator preparation and FAA approval of ODR's for each operator. When variants are used in mixed fleet flying, this AC's provisions and FSB provisions comprehensively address differences training, checking, and currency requirements for each variant. In some instances the FAA may limit the number of different variants permitted in mixed flying. This AC's provisions may also be used for transition credit when crews qualify for assignment to a different variant. In this instance ODR's are used to identify credits or constraints when crews leave one type of aircraft for operation of a related variant even if mixed fleet flying does not occur.

The overall process for operator application of MCR's, MDR's, and development, approval, use, and revision of ODR's is shown in figure 8-1.

ODR TABLE PREPARATION AND USE



KEY

MDR • MASTER DIFFERENCE REQUIREMENTS
ODR • OPERATOR DIFFERENCE REQUIREMENTS
POI • FAA PRINCIPAL OPERATIONS INSPECTOR
FSB • FAA FLIGHT STANDARDIZATION BOARD
OP-SPECS • OPERATIONS SPECIFICATIONS

FIGURE 8-1

8.1.2 Availability and Use of FSB Information. FAA FSB requirements are made available to operators through FAA certificate holding district offices (CHDOs), manufacturers, modifiers, industry trade associations, or other sources. Requirements are applied by individual operators when preparing initial programs or difference programs for specific fleets.

8.1.3 FSB System Enhancements. Aspects of the FSB system have previously been used by FAA and industry for formulation of initial requirements for new aircraft types and approval of initial operators. However, with this AC the process is formalized, extended to specifically address differences between variants, made a continuous process, and is standardized to use a common format for description, evaluation, and approval of individual operator programs. Previously, FAA requirements were informally addressed during FAA review of operators' proposals when those operators initially developed training and checking programs. Although requirements were applied to each transport aircraft and operator, they were not always uniformly applied, were not coordinated outside of FAA, and were described in a variety of ways in internal FAA memos or FSB reports which were not directives. Provisions were applied to varying degrees through the FAA principal inspector (PI) approval process. Distribution of criteria formerly was limited to FAA offices. Operators and the public may not have always been aware that these criteria were implicitly being applied by FAA offices to ensure safety. Examples of provisions previously applied include type ratings designations, training footprints or check maneuvers to be accomplished, training device limitations, or other special requirements such as check maneuver waiver of "no-flap" landings. While it was FAA policy that only those programs meeting FSB provisions were found acceptable for a particular type and operator, there was not a means to ensure consistent approvals by PI's due to a wide range of situations, unfamiliarity with the process, and uncertainty on the part of applicants about FAA requirements. This AC standardizes provisions in FSB reports including MCR's, MDR's, example ODR's, examples of acceptable training programs, and compliance checklists for use by FAA offices. This provides the FAA and industry with a single publicly available source document which describes FAA criteria applicable to a particular type, common types, related types, or variants.

8.2 Application of Master Common Requirements (MCR's).

8.2.1 Operator Use of MCR's. MCR's are included in FSB reports to identify criteria used in approving use of a new aircraft type for Part 121, for approval of an aircraft type which is new to a particular Part 121 operator, and for addressing requirements which are common to any variant. MCR provisions are applied by operators in development and specification of training, checking, and currency programs. MCR's are considered during manual development, submission of training programs to FAA for approval, development of checking procedures, and other such activities. Any means of addressing MCR's is acceptable as long as programs proposed by operators

satisfy MCR's. Direct use of MCR's by operators in program development can facilitate approval of an operator's programs by an FAA PI. This is especially pertinent for introduction of new types or variants since addressing criteria beforehand that will later be used by PI's in the review of an operator's proposed training and checking program will facilitate timely preparation, review, and approval. MCR's typically address sample training program content, training footprints, checking profiles, and other items which are considered acceptable for approval by FAA PI's.

8.2.2 MCR's for aircraft previously used in Part 121 service. MCR's for aircraft previously used in Part 121 service generally state criteria previously applied by FAA for that type including criteria common to all variants. Thus, except for unusual circumstances, programs previously approved already meet MCR's and continue to satisfy FAA requirements. Additional program review or administrative actions are not necessary unless compliance with present FAA criteria is uncertain. As such, operators continue to comply or begin to comply with MCR's for each aircraft whether or not variants are flown.

8.2.3 Aircraft without MCR's or FSB reports. When no MCR's are shown in an FSB report or where no FSB report is prepared for a given type (older aircraft like the CV580), new program proposals or programs previously approved are considered acceptable if they meet FAR and standard FAA policies. No special review or action on the part of PI's or operators is necessary to otherwise address MCR's.

8.3 Application of Master Difference Requirements (MDR's) and Preparation and Use of Operator Difference Requirements (ODR's).

8.3.1 Need for ODR's. When mixed fleet flying is proposed or is occurring at the time an FSB report with MDR's is published, air carriers prepare the necessary ODR table proposals to describe their particular fleet and show compliance methods. This is done to assess effects of differences, plan compliance methods, and to obtain principal inspector approval for that air carrier's specific program. ODR tables must be prepared and approved by the FAA for each fleet in which FSB requirements have been established (e.g., B737 fleet, B747 fleet,...) in accordance with FSB provisions.
8.3.2 Operator Responsibilities. The operator's responsibility includes:

(a) Specification of a base aircraft;

(b) Identification of differences between the base aircraft and variants involved in mixed fleet flying;

(c) Preparation of proposed ODR tables;

(d) Assessment and description of the effects of the differences on training, checking, and currency;

(e) Proposal of training, checking, and currency methods consistent with MDR's and FSB provisions;

(f) Presentation of proposed ODR tables with necessary supporting information to the FAA principal inspector for approval; and

(g) Revision of ODR tables when aircraft are introduced, modified or phased out, devices change, or MDR's change.

8.3.3 Use of Standard ODR Format. A common format for ODR tables is followed to facilitate preparation, review, use, comparison with Master Requirements, and to ensure consistency of application and approval by principal inspectors. The common format is used in all cases where ODR tables are required except when only a few minor differences exist and level A applies. In this event letters between an operator and FAA containing the necessary information and approval may suffice if acceptable to the PI.

8.3.4 ODR Hard Copy or Computer Implementation. Although ODR's use a standard format, they may be implemented in either hard copy or in a computer based system. ODR's may include extra or additional information and be tailored to operator needs as long as standard information is provided and required information can easily be identified. Use of hard copy or computer generated versions of standard forms provided by FAA in Attachment 3 of this Appendix is preferred and facilitates review, approval, and comparison.

8.3.5 Minimum Threshold for ODR Preparation. In the event of mixed fleet flying, a minimum threshold for preparation of ODR tables occurs when differences exist which potentially affect knowledge, skills, or abilities necessary for flight safety. Differences not related to this criteria need not be addressed in ODR tables.

8.3.6 ODR Description and Examples. ODR's are described in section 6. Examples of acceptable ODR tables for a particular type are shown in each FSB report. A set of example ODR tables for several particular B737 variants is included in attachment 3. An example of several pages from an ODR table for a B737 variant is shown in figure 8-2 and figure 8-3 below. Figure 8-2 shows the application of ODR's to address systems differences and compliance methods from a B737-300 base aircraft to a B737-400 variant.

8.3.7 In figure 8-2 differences are grouped in a convenient order related to a typical operations manual. Air Transport Association (ATA) code numbers are shown for cross reference. The "Remarks" column depicts differences and the "Flight Characteristics" and "Procedures" columns address effects of differences. Compliance methods within provisions of the FAA's MDR's for the B737 (figure 6-2) are shown at the right of the diagram. The abbreviation AVT/SU in this example ODR table means audio

visual training and stand up instruction. CBT denotes computer based training and OE identifies that operating experience is required. Figure 8-3 shows an example of use of an ODR table to address maneuver differences between a B737-200ADV base aircraft and B737-300 variant.

OPERATOR DIFFERENCE REQUIREMENTS (ODR) TABLE

B737-300 TO B737-400 - SYSTEMS DIFFERENCES

(EXAMPLE ITEMS)

DIFFERENCE AIRCRAFT: 737-400 BASE AIRCRAFT: 737-300 APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
21 AIR COND. & PRESSURIZA-TION	- 3 ZONE AIR CONDITIONING SYS. - REVISED CONTROLS AND INDICATORS - TRIM AIR	NO	SEE APP.	TNG HND-OUT				
22 AUTOFLIGHT	- REVISED DISENGAGE BAR -TO/GA MODE NOW AVAILABLE WITH BOTH F/D SWITCHES OFF	NO	NO	TNG HND-OUT				
24 ELECTRICAL	- HIGHER GENERATOR RATINGS	NO	NO	TNG HND-OUT				
27 FLIGHT CONTROLS	- INCREASED FLAP PLACARD SPEEDS	NO	NO	TNG HND-OUT				
34 NAVIGATION	- FMCS UPDATE 4; SEVERAL NEW CDU PAGES WITH ADDED INFO/ FEATURES	NO	NO	TNG HND-OUT				
LIMITATIONS	- GROWTH RELATED CHANGES	NO	NO	TNG HND-OUT				B

FIGURE 8-2

OPERATOR DIFFERENCE REQUIREMENTS (ODR) TABLE

B737-200ADV TO B737-300 - MANEUVERS DIFFERENCES

(EXAMPLE ITEMS)

DIFFERENCE AIRCRAFT: 737-300 BASE AIRCRAFT: 737-200 ADVANCED APPROVED BY (POI):_____				COMPLIANCE METHOD				
				TRAINING			CHKG/CURR	
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	FLT CHK	CURR
NORMAL TAKEOFF, CLIMB, CRUISE, DESCENT, INSTRUMENT APPROACHES, LANDING	- OPTIONAL USE OF AFDS, & A/T (ALSO AN OPTION FOR -200 AFCS AIRPLANES) - OPTIONAL USE OF FMCS	NO	SEE APP		AVT/ SU	FMS/ AT	C* + OE	D 90 DAYS + 3 FLT SEG.
NON-NORMAL MANEUVERS	- OPTIONAL USE OF AFDS, & A/T (ALSO AN OPTION FOR -200 AFCS AIRPLANES) - OPTIONAL USE OF FMCS	NO	SEE APP.		AVT/ SU	FMS/ AT	C*	

FIGURE 8-3

8.3.8 The maneuvers shown on the ODR Table of figure 8-3 are grouped in an order related to Part 61, Appendix A; Part 121, Appendix F; or AQP flight qualification evaluation. The "Remarks" column depicts differences and the "Flight Characteristics" and "Procedures" columns address effects of differences. Compliance methods within provisions of the B737 MDR's (figure 6-2) are again shown at the right of the diagram. "FMS/AT" means flight management system/advanced training device. The reference "SEE APP" in figure 8-3 under the procedures change (PROC CHNG) column, refers the reader of the ODR table to an appendix to the table which had been prepared by the operator to more fully list and explain the particular procedural changes that pertain.

8.3.9 Other Use of ODR's is Permissible. The ODR process may be used for other applications such as for flight attendant or dispatcher qualification tracking, but such use is not required as part of this AC's provisions.

8.4 Selecting Base and Variant Aircraft.

An operator chooses a base aircraft from one of the variants or variant groups which that air carrier operates. Base aircraft are defined in section 5. Additional information regarding base aircraft selection is in section 9.

8.5 Identification of Differences and Analysis of Effects of Differences.

Differences must be described between base aircraft and each variant to be flown. This may be done from base to each variant or from base to the first variant, first to second, second to third, until each variant is addressed in a way which satisfies all MDR requirements relative to the base aircraft. As long as a complete and unambiguous relationship can be drawn from the base aircraft to each variant and as long as all MDR requirements are met from the base aircraft to each variant, there is no need to describe each possible combination of variants. This permits a comprehensive identification of differences that exist in the fleet, determination of the effects of those differences, and shows compliance methods. Differences should be categorized by design, systems, and maneuvers and generally follow operations manual or flight manual organization to facilitate use and review. Effects of differences are stated in terms of effects on flight characteristics and procedures. Procedures include normal, non-normal, alternate, and recall procedures, as applicable. Since complete descriptions may be too lengthy for direct incorporation in ODR tables, appendices or references to other operator documents may be used to describe differences or effects. Some differences or effects may be repeated in the analysis. For example, an FMS difference may be noted in both a navigation system section and maneuver section related to preflight setup. This is recognized, and it is not necessary to limit difference descriptions to preclude overlap. The objective is to assure that each difference which pertains to crew training, checking, or currency is identified and addressed.

8.6 Identification of Compliance Methods.

Once differences and difference effects are described, methods of comprehensively addressing each difference (compliance methods) are shown. As with the difference descriptions, redundancy may occur. The same training or checking compliance item shown for one item may also be related to and credited for other items. The objective for description of compliance methods is to show that each difference is addressed in some appropriate way, to show that the method and level chosen is consistent with the FSB MCR's, MDR's, example ODR's, and is at a level at least equal to that required by the MDR's.

8.7 When Proposed ODR Compliance Methods Do Not Meet MDR's.

If proposed ODR compliance methods do not satisfy MDR's or other FSB report constraints, several alternatives exist:

(a) Differences may be reduced to levels at which compliance is possible or differences may be eliminated by modification of aircraft, systems, or procedures;

(b) Other training methods or devices may be acquired, leased, or otherwise applied that fully comply with MDR's and other FSB provisions;

(c) Crew assignments may be separated for a fleet so that mixed-flying of variants does not occur;

(d) MDR change proposals may be requested through FAA PI's to the FSB. If FSB authorized changes to the MDR's are made, the operator may then apply the revised criteria; or

(e) The operator may seek alternate approval following the process described in section 9.7.

8.8 Maximum Number of Variants.

Even though each base and variant pair may individually comply with MDR's and other FSB provisions, other limitations may also constrain mixed fleet flying. In order to preclude cumulative effects of differences for multiple variant aircraft from adversely affecting crew performance, the FAA sets guidelines for the maximum number of variants to be flown. At difference level A the number of variants is greater since differences are fewer and less significant; whereas at level D or level E differences are greater. To accommodate differences as difference levels increase, increasing limitations are placed on the number of variants that may be flown at the higher levels. Specific guidance to PI's for approval of multiple variants is given in section 9.15.

8.9 Application, Review, and Approval.

The FAA review and approval process is described in section 9. The process is summarized here to facilitate ODR table preparation. Application for differences program approval is made by operator submission of the proposed ODR tables and necessary supporting information to the CHDO principal inspector. The application should include ODR tables, any appendices to the tables necessary for evaluation of the proposal, a transition plan if needed, and a proposed schedule for implementation. PI's may require review of pertinent and additional information such as copies of bulletins, manuals, or other training materials prior to ODR approval. Training device review and approval may also be necessary prior to ODR approval if devices not approved by the PI or evaluated by the NSET are proposed. Sufficient lead time must be provided to the FAA for review. Lead time depends on the complexity of program, proposed difference levels, number of variants, other air carrier precedents already set, FAA experience with the proposed variants, training devices, methods, and other such factors. As a guideline, many non-controversial level A changes can be reviewed and approved in a few days. Complex programs with many variants can require months for review and approval if FSB review and public comment on MDR changes are necessary. It is the operator's responsibility to consult with the PI to ensure that sufficient lead time is provided to review initial submissions or changes. At least 60 days notice is acceptable for most programs. Following air carrier submission of the program proposal, PI's compare the proposed ODR with the FSB report provisions including the MDR's. Pertinent FAA policy directives (Air Carrier Handbook) are consulted for interpretations or guidance in accomplishing the review. In certain instances the PI must consult with the FSB prior to ODR approval. If ODR's are consistent with FAA policies and within constraints of the MDR's and example ODR's, the PI approves the air carrier's ODR tables and its proposed differences program. When approved by FAA, ODR's establish the basis for training, checking, and currency programs for a given fleet for that air carrier. Part 121 operations may only be conducted following air carriers implementation of ODR's provisions.

8.10 Implementation Provisions (Transition Period).

In certain instances implementation provisions (transition periods) may be necessary to permit operators a reasonable time to comply with FSB requirements. This is necessary when FSB provisions are initially set or revised and provisions require lead time for program preparation, device acquisition, or to revise previously approved programs. FAA approval of transition provisions are discussed in section 9.17 and in individual FSB reports for each type aircraft.

8.11 ODR Revision.

ODR revisions are initiated when changes occur in an operator's fleet

regarding differences, difference effects, or compliance methods. ODR revisions are appropriate when changes occur which affect crew knowledge, skills, or abilities pertinent to flight safety. Examples of program changes or factors that may require ODR revision include:

(a) Addition or deletion of variants in a fleet;

(b) Modification of base aircraft or variants in a fleet;

(c) Change of base aircraft;

(d) Discontinuation of use, addition of new or modification of training devices referenced by ODR's;

(e) Revision of training methods with a resulting change in compliance levels;

(f) Changes in effects of differences such as revised procedures, performance, or flight characteristics;

(g) FAA revision of MDR's or other FSB provisions;

(h) Adverse operating experience or training and checking experience which dictates inadequacy of ODR's, MDR's, or other FSB provisions;

(i) FAA surveillance results, enforcement actions, or failure of an operator to comply with provisions of their approved ODR's;

(j) Other factors as determined by the principal inspector.

Revisions are approved using the same procedures as for initial ODR's.

9. FAA REVIEW AND APPROVAL OF OPERATOR PROGRAMS.

9.1 General.

9.1.1 FAA Responsibilities. FAA has the responsibility for review, approval, and continuing surveillance of individual air carrier programs consistent with this advisory circular and FSB provisions. Within certificate holding district offices (CHDOs), principal inspectors (PI's) have the responsibility for program review and approval. PI's are supported by aircrew program managers (APM's) or airmen certification inspectors for technical analysis related to each particular fleet and by air carrier inspectors (ACI's) and geographic inspectors for surveillance of an operator's programs which must be in compliance with FSB report provisions. This applies at both main bases and crew bases and training sites away from the CHDO (e.g., outlying crew bases contract training facilities). In addition to review, approval, and continuing surveillance

of operator programs, CHDOs and other district offices manage airmen certification consistent with AC criteria and FSB provisions. This includes supervision of FAA inspectors and air carrier check airmen who apply FSB initial or recurring checking provisions. See section 10 references to airmen certification.

9.1.2 FSB Report Availability to FAA. FSB reports are available from assigned Aircraft Evaluation Group (AEG's) to Flight Standards District Offices (FSDO's) in hard copy on a limited copy basis and by computer through the Aviation Safety Analysis System (ASAS). FSB reports are updated as changes are made by the FSB/AEG. Current revisions must be used.

9.1.3 Availability of FSB reports to Operators and Application by Operators. Air carriers may obtain FSB reports through various sources. PI's and CHDO's are the usual source of FSB requirements for operators. AEG's, manufacturers, aircraft modifiers, other air carriers, or industry trade associations are other possible sources for operators to get copies of FSB reports or pertinent FSB requirements. When applicable, operators should become familair with FSB provisions and this advisory circular provisions, prepare proposals, establish compliance, and seek approval in a timely manner. It is the operator's responsibility to plan sufficient lead time for the approval process to support air carrier operating plans. Late application or application with oversimplified or unrealistic proposals do not relieve an operator of the requirements for timely submission, FAA approval, and operator implementation of appropriate provisions prior to Part 121 service.

9.1.4 Approval Basis. FAA approvals are based on FSB report findings and policy guidance included in FAA directives (e.g., Air Transportation Operations Inspector Handbook, Order 8400.10, etc.). Except as provided for in transition plans, all preparations must be complete and provisions approved prior to conducting training, checking, or establishing currency under this AC and an FSB report.

9.2. Application of MCR's.

9.2.1 Applicability of MCR's to New Approvals. MCR's apply when an operator develops the first program for a given type. MCR's are usually first addressed when a program for a new aircraft type begins or when introducing an aircraft type that is new to that operator. Since mixed-fleet-flying often does not take place, MDR's and ODR's may not apply at that time. MCR's are included in FSB reports to comprehensively list FAA criteria for approving use of a particular aircraft type for Part 121, whether or not variants are flown. MCR's state criteria applied by FAA for a given type including criteria common to all variants.

9.2.2 Applicability of MCR's to Programs Previously Approved. For programs previously approved by FAA for a particular type, MCR's generally should

already be met since MCR formulation takes into account previous FAA approval actions. Except for unusual circumstances such as program changes, additional review, or administrative issues, further action by either a PI or an operator are not necessary. For example, program adjustments may be needed if MDR's and ODR's compliance with present FAA criteria described by MCR's is uncertain. Operators continue to comply or begin to comply with MCR's for each aircraft whether or not variants are flown.

9.2.3 PI Approvals to be Consistent With MCR's. PI's approve programs if carrier's programs comply with MCR's described in the FSB report. This includes related information such as having programs which are at least the equivalent of example training programs shown in the FSB report, compliance checklist items are addressed, and relevant information in other FAA directives such as Order 8400.10 is applied. The appropriate AEG should be consulted if doubt exists regarding program adequacy or compliance with MCR's. The approval process regarding MCR's is through training program approval, check airman approval, op-spec approval and other such approvals in accordance with FAA policy. Specific or separate approval documents for MCR's are not necessary since MDR provisions are indirectly incorporated into other operator documents and programs.

9.3 Operator Application of ODR's.

9.3.1 Operators Using Variants in Mixed Fleet Flying. If FSB requirements are published, air carriers operating variants in mixed fleet flying must apply provisions of this advisory circular and the FSB report. This must be done prior to Part 121 use of any variant having crew qualifications established under this AC or prior to the end of the specified transition period for other variants. AC criteria and FSB MDR's must be applied any time crews fly variants of an aircraft between training or checking events (e.g., 6 month-checks or AQP evaluations). Situations like flying several variants in the same bid line, alternate bidding of variants from month to month, flying a base aircraft but retaining dual qualification to allow assignment to trips in reserve are each considered mixed fleet flying and require this advisory circular application.

9.3.2 Threshold Requiring ODR Preparation. Even though an air carrier has different configurations of aircraft used in mixed fleet flying, there is some threshold below which ODR tables and principal inspector approval is not required. The threshold requiring AC and ODR application occurs when differences in variants affect crew knowledge, skills, and/or abilities pertinent to flight safety. If systems, controls, indications, procedures, or maneuvers are different for variants and these differences have an effect which is of significance related to what the crew needs to know or do for safe flight operation, and mixed fleet flying occurs, then an operator must prepare ODR tables and seek FAA approval (e.g., similar switches have a different function, mode logic is different, limits are different). Conversely, ODR tables would not need to be prepared in situations which do not affect flight safety, (e.g., seating configuration differences with no change in emergency

evacuation knowledge or duties). In such instances ODR tables are not needed even though crews routinely operate several different aircraft. A minimum threshold is set to preclude unnecessary administrative assessment of variants which have no safety implications. If changes to aircraft or introduction of variants do not affect flight crew knowledge, skills, or abilities related to flight safety, then such changes need not be considered in addressing FSB or this advisory circular provisions.

9.3.3 FAA Review of ODR Proposals. After preparation the carrier submits proposed ODR tables and supporting information to the CHDO and PI for review and approval. PI's evaluate the following:

(a) The operator has made an appropriate identification of a base aircraft;

(b) Operators have comprehensively identified differences in the particular fleet. This includes appropriate ODR table comparisons between the base aircraft and each variant;

(c) The operator's assessment of the affects of differences on flight characteristics and procedures for the base aircraft and each variant are suitable and valid;

(d) The compliance methods listed are consistent with the requirements of the MDR tables, footnotes, other pertinent FSB report provisions, and FAA Orders 8400.10 and related advisory circulars;

(e) ODR provisions adequately address any "subtle differences" between similar variants which have a significant possibility of inducing potentially serious crew errors;

(f) Training materials, methods, devices, and simulators proposed are acceptable, approved by the National Simulator Evaluation Team (NSET) if necessary, or if FSB provisions apply the ODR tables meet FSB constraints;

(g) Aviation safety inspectors, including aircrew program managers (APM's) and aircrew program designees (APD's), are prepared to apply FSB report checking standards;

(h) Implementation plans are adequate and consistent with FSB provisions and other FAA policy; and

(i) Other factors determined necessary by the PI are considered and any requirements met.

9.3.3.1 As the basis for the principal inspector's evaluation of the suitability of a particular air carrier's proposed ODR table, items are compared with example ODR tables and the MDR's provided in the Flight Standardization Board report. The MDR always remains the primary basis for

comparison. However, in the absence of identical situations to the FSB report, a PI also may consider other similar cases already approved by FAA. For example, the PI may compare the applicant air carrier's proposed tables with other tables previously approved for other operators, for other similar variants, for other types with analogous variants, or combinations of these. The AEG should be consulted in the absence of conclusive guidance in making such judgments. Guidance for evaluation of specific system or maneuver items may be found by comparison of the proposal with the example ODR table shown in the FSB report, other approved ODR tables for the same variants, or similar tables for other variants. While the air carrier may use devices, techniques, or methods of an equal or higher difference level, they may not exclusively use methods or devices of a lower level. Critical methods must be at least at the level specified by the FSB on the MDR's and shown in the example ODR table. Actual ODR tables proposed by the air carrier may show a variety of compliance methods to satisfy a particular item, ranging from level A through the level required by the MDR's. For example, if the MDR requirement is a minimum of level C, the air carrier may propose to use a combination of level A bulletins, level B slide tape presentations, as well as level C training devices to satisfy pertinent items. However, at least level C must be shown for critical items. The operator may choose to satisfy a level C MDR provision with level D or level E methods.

9.3.4 ODR Review Example. The following is an example of the process for review of a specific item on a proposed ODR table. For each proposed ODR item both the FSB example ODR table and MDR's are consulted and compared with the operator's proposal. If the MDR's specify that level C devices are needed for training, checking, and currency between the base aircraft and a particular variant and the example ODR table shows applicable level C systems differences or maneuvers, then the principal inspector should ensure that the proposed ODR table submitted also shows at least level C for those pertinent systems or maneuvers.

9.4 Base and Variant Identification.

9.4.1. Selecting the Base Aircraft. Base aircraft are defined in section 5. In general, base aircraft are particular variants used as reference for comparison of differences that affect, or could affect, flight crew knowledge, skills, or abilities pertinent to flight safety. A base aircraft should typically be the particular variant which the operator trains to first, the variant which the operator has the largest number, the variant most crews fly frequently, or the variant which represents a configuration which the air carrier eventually will have as a standard. Other variants may be selected as a base aircraft when the most logical variant is being phased out, converted to a new configuration, or other such factors. Base aircraft may be redesignated at the discretion of the operator with FAA concurrence. Base aircraft are identified by make, type, model, and series or other distinguishing classifications. Classification should distinguish pertinent differences in configuration, handling characteristics, performance, procedures, limitations, controls, instruments, indicators, systems, installed

equipment, options, or modifications. A base aircraft may either be a single variant or a group of variants with the same characteristics. Operators designate base aircraft by make/type/model/series (DC9-31, B757-232...), FAA registration ("N number," e.g., N663US), air carrier tail number (aircraft 801-820), or other means which can uniquely distinguish between each of an operator's variants.

9.4.2 Identifying Variants. A variant is an aircraft or a group of aircraft with the same characteristics that have pertinent differences from a base aircraft. Pertinent differences are those which require different or additional flight crew knowledge, skills, and/or abilities that affect flight safety. Differences considered pertinent are those relating to configuration, handling characteristics, performance, procedures, limitations, controls, instruments, indicators, systems, installed equipment, options, or modifications. Variants usually, but not always, are a different model or series than an aircraft identified as a base aircraft (e.g., a DC9-50 is a variant compared to a DC9-31 base aircraft). Variants may also exist within a model/series due to differences in installed equipment (e.g., a B737-200 ADV with a PDCS, Omega, SP-177 autopilot, and autoland is a different variant than another B737-200 ADV with a SP-77 autopilot, and basic VOR/DME navigation). The number of variants depends on how many groups of aircraft have distinct differences (e.g., B737-122, B737-232, B737-287, and B737-3B7 aircraft are each variant groups). When designated in FSB reports, any aircraft included in that report in an MDR table is considered a variant, even though some aircraft may have a "common type rating" or be a different type designation (e.g., a B757-200, B767-200, and B767-300 are related as variants even though the B757 and B767 have different type certificates). As with base aircraft, operators designate variants by model/series, FAA registration "N number," air carrier tail number, or other classification which can uniquely distinguish pertinent differences between each variant group and a base aircraft and between each other variant. Variants are typically those aircraft within a particular fleet in which crews receive differences training after initial qualification is completed, aircraft which the air carrier has fewer in the fleet (e.g., leased aircraft, interchange aircraft), or aircraft in an interim configuration which the air carrier will eventually modify to a standard (e.g., a few aircraft have Omega and PDCS installations and other aircraft are being equipped). A variant or group of variants may be designated or redesignated at the discretion of an operator, manufacturer, or modifier. However, for any designation or redesignation, it must be possible to clearly relate any variants identified to variant groups shown on the FAA's MDR table.

9.4.3 Accounting for Each Variant. The important factor in base and variant identification and ODR table preparation is that regardless of the combination used there should be direct and complete traceability of both differences and compliance methods from the base to each variant that crews are assigned to fly. There must be a clear description showing the adequacy of compliance methods to assure proper training, checking, and currency to safely operate each variant assigned. In the event that the air carrier has more than one variant to compare with the base aircraft, the ODR table can be prepared in

several ways. To illustrate acceptable methods, three examples are shown for an air carrier operating DC9-30s, MD-82s, and MD-87s:

(a) The first method is to identify the DC-9-30 as the base aircraft, then list differences from the DC-9-30 to the MD-82 and from the DC-9-30 to the MD-87.

(b) The second method is to consider the DC9-30 as the base aircraft, provide differences and compliance methods from the DC9-30 to the MD-82, and then compare the MD-82 to the MD-87 listing only the incremental differences between successive variants. Even though differences may be described incrementally, MDR requirements relative to the base aircraft must be satisfied.

(c) A third acceptable method would be for the carrier to designate an intermediate variant (e.g., MD-82) as the base aircraft, then compare differences from the MD-82 back to the DC-9-30 and from the MD-82 forward to the MD-87.

9.4.4 Each of these methods is considered acceptable as long as MDR requirements are met relative to the base aircraft, differences and compliance methods can clearly and completely be established, and methods are revised to ensure they remain current as the fleet changes.

9.5 Approval of ODR's.

9.5.1 Approval Method. Following review and determination that an air carrier's program meets pertinent FSB requirements, the principal inspector approves that particular program by signing ODR's. ODR tables are approved for each applicable fleet (e.g., ODR's for the B737 fleet, DC10 fleet,...). Signature of ODR's or revisions, together with other relevant documents such as training programs and Op-Specs, constitute approval by the principal inspector of that air carrier's differences training, checking, and currency program consistent with Part 121 Subparts N and O or the AQP SFAR. ODR tables are used for most programs. In certain instances where variants have only a few minor differences at level A, approval may take the form of a letter including necessary information in lieu of use of tables.

9.5.2 PI Authority at level A and B. Principals have authority at A and B level to make determinations without AEG coordination if compliance methods are within the MDR's. This is important to provide timely response for minor difference requests. The results of these determinations are forwarded to the pertinent FSB for permanent retention, comparison, and future FSB evaluation.

9.5.3. PI Coordination Required At level C and Above. At C, D, and E level the principal inspectors may approve air carrier programs only if the programs are clearly within the requirements of the MDR's and coordination, if necessary, with the AEG has been accomplished. If there is doubt as to whether an air carrier's program meets or does not meet the MDR's, the

principal inspector consults with the FSB well before the air carrier's program approval date to allow time for review and resolution of open issues. If the air carrier request is unclear or less strict than the MDR's requirements, the principal inspector may not approve that program until resolved.

9.5.4 Initial and Final Approval. As with other training programs, principal inspectors may authorize "initial" approval for an assessment period to review program effectiveness. Final approval should be made after suitable experience is obtained (generally within six months) in accordance with criteria in FAA Order 8400.10. Situations in which initial approval is completed but final approval is delayed because of continuous revision or that results are uncertain should be avoided. When air carriers propose to add variants, modify existing aircraft, change base aircraft, phase aircraft out, or take other actions which make the applicability of ODR's unclear, then the ODR tables for that air carrier must be updated. For some air carriers a continuous series of ODR table modifications will occur as its fleet changes. Nevertheless, the ODR tables must be current at all times. ODR tables are used as a primary means for establishing regulatory compliance and managing surveillance of training, checking, and currency programs.

9.6 Principal Inspector Uncertainty Regarding Program Compliance.

The principal inspector must resolve any questions prior to approval if it is not clear that the air carrier's proposal complies with the MDR table and other FSB provisions. When in doubt the principal inspector should consult with APMs, ACIs, other principal inspectors, or Headquarter's personnel who have related FSB application experience. When issues cannot be resolved so as to clearly establish compliance with MDR's or other FSB report provisions, the AEG/FSB should be consulted. Early in program development principal inspectors may need more consultation with FSB members. Whereas in mature programs better examples will be available in FSB reports, other air carrier ODR tables will be available as background information to principal inspectors, and the manufacturers will have larger data bases for air carriers and PI's to draw on to assist in the initial preparation of proposed ODR tables.

9.7 Proposals that do not comply with FSB Provisions.

If the operator proposes a program less restrictive than the requirements of the MCR's, MDR's, or other FSB provisions, then options of section 8.7 apply. If an operator wishes to pursue a proposal less restrictive than the FSB report or MDR's, details of the proposal and supporting documentation should be presented to the principal inspector for forwarding to the AEG/FSB. The PI will evaluate the carrier's proposal and, if justified, forward the proposal with recommendations for revision of MCR's or MDR's.

9.8 FSB Revision Of MCR's, MDR's, or other FSB provisions.

When requested by PI's, the FSB reviews operators proposals and if necessary modifies MCR's, MDR's, and other FSB provisions. If master requirements have been amended and the proposal meets the revised requirement, the principal inspector may approve the proposal. Other operators can also apply for similar approval, credit, or reductions based on the revised FSB report. Major changes in the MDR table may require review by the full Flight Standardization Board. Minor changes or interpretations may be considered by the FSB on an ad hoc basis between FSB meetings for that aircraft type. For some requests changes can be made based on existing or the supplied information. Other changes require documentation of operating experience or other data provided by the applicant. Complex cases may require testing to be conducted by the applicant or the manufacturer prior to the time that the MDR table can be changed. Should the MDR's be updated to accommodate a change request, the proposed ODR can be approved within the new MDR's. For revisions to levels C, D, or E proposals must be forwarded to the FSB for resolution through the formal FSB process which may include a public meeting. At least 60 days should be allowed for FAA evaluation of such proposals.

9.9 ODR Distribution and Record Retention.

Copies of each approved ODR should be retained by the operator and the CHDO then forwards to the FSB for review or permanent retention. When no longer active, ODR tables should be retained by operators as long as they are used as a basis for airman qualification or operations approval for at least 3 years for documentation of crew qualification in the event of subsequent enforcement or accident investigation. If type rating assignments are keyed to ODR program completion or if ODR's may be a factor in establishing eligibility for type ratings, inactive ODR tables may be retained by operators for longer periods to ensure documentation of crew qualification.

9.10 ODR Table Use for Transition Program Credit.

This AC may be applied when crews transition train and check from one variant to another, even though mixed fleet flying is not intended, in order to facilitate and clarify application of previous model experience to a different aircraft. MDR's, ODR's and other FSB provisions are applied the same as for mixed-flying except that maintenance of currency in the base aircraft is not a factor.

9.11 Coordination with APM's, ACI's, and Geographic Inspectors.

Once the approval process is completed for a particular air carrier, principal inspectors should ensure that airman certification inspectors, air crew program managers, air carrier training check airmen, and line check airmen are familiar with applicable provisions of the FSB report to ensure proper application of checking requirements on a continuing basis.

9.12 Proving Tests.

When a level C or greater variant is introduced following type certification, supplemental type certification (STC), or when introduced by a new operator, proving runs may be needed. Proving runs are usually needed for levels D and E, and at level E regulatory provisions for proving runs must be met. Training flights, test flights, delivery flights, and demonstration flights may be credited toward levels C and D proving requirements if necessary operational experiences are demonstrated and the flights are in accordance with an FAA approved plan. FAA Order 8400.10 describes policies for FAA approval of proving tests.

9.13 Line-Oriented Flight Training (LOFT)/Line Operational Simulation (LOS).

When operators have LOFT/LOS programs and additional variants are approved, the principal inspector must review those LOFT/LOS programs to assure applicability to each variant.

9.14 Initial Operating Experience (IOE) and Supervised Line Flying (SLF).

As described in this advisory circular and FSB reports, IOE is consistent with definitions and requirements of Part 121. Although IOE credit for experience with similar variants or systems is permitted and completion of IOE in simulation is permitted in some instances, certain limitations are placed on IOE. Principal inspectors must approve IOE/SLF in accordance with FSB provisions. IOE and SLF are addressed in sections 5 and 6.

9.15 Limitations on the Total Number of Variants.

9.15.1 Mixed Flying of Multiple Variants. When mixed fleet flying involves crews operating more than a base aircraft and a single additional variant, additional constraints limiting the total number of variants may apply. Operation of multiple variants requires a review by the principal inspector to ensure that crews can retain and properly apply necessary differences information or skills for each variant without confusion between different variants. When more than two variants are flown, principal inspectors must specifically ensure that subtle or compounded differences between the various models do not result in confusion of procedures, maneuvers, or limitations. ODR's proposed for the overall combination of variants to be flown are examined to:

(a) Ensure that multiple differences do not result in confusion of requirements or an excessive level of complexity for flightcrews to adjust to or retain important differences information;

(b) Ensure that subtle variations in differences information are not likely to be mistakenly applied and lead to unsafe conditions; or

(c) Ensure that the amount of differences information is not excessive

and consequently is not applied to the wrong variant or is easily forgotten.

9.15.2 Applicable Limits. The following limits are established for principal inspector approval of multiple variants without coordination with AFS-200 and review of proposed ODR's by the assigned AEG/FSB:

(a) 5 variants of level A aircraft;

(b) 4 variants of level B aircraft;

(c) 3 variants of level C or D aircraft; or

(d) 2 level E variant aircraft.

9.15.3 When other combinations of aircraft are proposed, an equivalent level of safety must be established consistent with the guidelines above. For example, four variants including three at level A and one at level D would be acceptable. When levels D or E variants are flown, two additional variants at level A should be approved at the most. In the event PI's require assistance in determining equivalence, the FSB should be consulted.

9.15.4 Mixed Flying of Related Types. Derivative aircraft that are related types, even though level E and a different type rating is assigned, have MDR tables developed and mixed-flying is directly managed (e.g., B747 and B747-400). FSB reports and MDR's are available to principal inspectors and are used for review and approval of mixed-type flying for each variant.

9.15.5 Mixed Flying of Unrelated Types, Without Variants. This AC does not address specific criteria for mixed-flying of different type aircraft that are unrelated (e.g., B-727 and DC-10). Nevertheless, certain of these concepts and precautions should be applied by air carriers or principal inspectors when crews are simultaneously qualified to fly unrelated types. An example would be the completion of a review of procedures of the two unrelated types to ensure that subtle differences in procedures do not inadvertently lead to an inappropriate crew response in an emergency when crews instinctively react from habit, when crews are fatigued, or when distractions occur. In such instances certain procedures may need to be revised even though for an individual aircraft they may be acceptable. This is to reduce the likelihood of crew error when subtle but significant differences exist between types. Such differences, if not highlighted or otherwise addressed, could lead to unnecessarily increased risk when frequently flying different unrelated types. Thus, when crews fly unrelated types (B-727 and DC-10) between six-month checks or six-month training events, operators and principal inspectors should use, but are not required to use, applicable procedures of this AC between the different types. However, if variants exist within the separate types and mixed flying occurs, provisions of this section may apply. When variants also exist within the separate types, certain ODR provisions are necessary even though MDR's and ODR's are not defined between the unrelated types.

9.15.6 Mixed Flying of Unrelated Types, With Variants. Principal inspectors may limit the total number of variants when several unrelated types are flown even though the variants for each type alone may be acceptably covered by ODR's (e.g., 3 variants of B727s and 2 of DC-10s). If one or both types have variants (e.g., 3 variants of the B727 and 2 variants of the DC-10), then ODR's must be applied for variants within each separate type. Provisions of this AC limiting the total number of variants in mixed fleet flying do apply between different types in this situation. ODR's are prepared for B727 variants and separate ODR's address the DC10 variants. Limits are placed on the total number of variants even though unrelated types are involved. For purposes of limiting the number of variants, the separate types are considered level E. Thus, with two separate and unrelated types, at most two additional level A or B variants of either type are permitted without specific AFS-200 approval.

9.16 Compliance Checklist for CHDO's.

FSB reports provide a FAR compliance checklist. The checklist identifies those Federal Aviation Regulations, advisory circulars, or other FAA requirements that have been found to be in compliance by the AEG's for that type aircraft and its variants. Pertinent FAR items not shown on the checklist or items shown but not reviewed by the AEG/FSB for compliance must be reviewed by the CHDO prior to principal inspector approval of operations specifications (Op-Specs) permitting that type or variant to be used under Part 121. Items found not to be in compliance by the AEG/FSB must be reconciled and compliance established prior to Part 121 operations. The compliance checklist is an aid to CHDOs to show the status of those FAR evaluated by the AEG/FSB and does not comprehensively address all possible FAR and advisory circulars that an operator may need to demonstrate compliance with. Op-Specs, exemptions, deviations, or other factors which the AEG/FSB may not be aware of may also apply and may modify compliance status or methods shown in the checklist.

9.17 Implementation and Transition Provisions.

Reasonable Time to Comply. In certain instances implementation or transition provisions may be necessary. Transition provisions are established to permit operators a reasonable time to comply when original FSB requirements are set or when MDR's or FSB provisions are revised which differ from previously approved programs. Transition provision requirements are addressed in each type's FSB report. Transition provisions must comply with any criteria shown in FSB reports. Transition provisions are approved by principal inspectors at the same time ODR tables or revisions are approved. Air carriers conducting mixed fleet flying that do not elect to apply this AC or implement FSB provisions within the period specified by the FSB report require approval as designated by AFS-1.

9.18 Other Applications of this AC's Provisions.

Operators or principal inspectors may optionally apply the processes of this AC to other situations related to mixed fleet flying which are beyond the scope of this AC. For example, the process of describing differences and methods of addressing those differences may also apply to training or checking of dispatchers, flight attendants, maintenance, or other safety related personnel. However, there is no requirement to do so, and such applications are at the discretion of the operator in coordination with principal inspectors. If necessary, future provisions may specifically address mixed-flying of unrelated aircraft types and such other applications.

9.19 Aircraft Which Do Not Have An FSB Report.

When an FSB report is not prepared for a given type, or when MCR's, MDR's, or other provisions are not shown, programs are approved in accordance with the FAR, Order 8400.10, and other pertinent AC's. Special review or action on the part of principal inspectors or operators to address provisions which would otherwise be specified in FSB reports is not necessary.

9.20 Air Carriers That Elect Not To Apply This AC.

If it is appropriate for an operator to apply this AC and FSB provisions but the operator does not to do so, alternate approval is required as designated by AFS-1. If alternate means are approved, FAA makes conservative determinations regarding program time reductions, simulator equivalences for Part 121 Appendix H credit, LOFT credits, approval of use of contract training facilities or programs, proving run reductions, IOE surveillance, AQP SFAR approval, and other relevant FAR provisions. Air carriers must justify equivalence and may expect a minimum of credit for simulators and training devices when simulators or devices do not closely match each variant of aircraft operated by that air carrier. This is necessary to ensure that an adequate level of safety is maintained. If an air carrier does not choose to apply the provisions of this AC when applicable, principal inspectors should consult their FAA Region, the AEG/FSB, NSET, and AFS-200 as appropriate. FAA response to non-compliance will be assessed on a case by case basis.

9.21 Air Carrier Mergers.

In addition to provisions described above, when mergers of FAR 121 air carriers occur which result in the integration of variants from the predecessor operators, certain additional coordination is appropriate. The POI of the surviving or newly designated operator should consult with the former POI(s) responsible for any ODR tables previously approved to assure proper integration of the new fleet. In addition, the POI responsible for the merged fleet should consult with the chairman of the responsible FSB to assure than any information available to the FAA FSB relative to variants of the proposed merged fleet may be considered before new ODR tables are approved.